



Module Specification

Engineering Project with Nuclear

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Part 1: Information

Module title: Engineering Project with Nuclear

Module code: UFMFGY-40-3

Level: Level 6

For implementation from: 2025-26

UWE credit rating: 40

ECTS credit rating: 20

College: College of Arts, Technology and Environment

School: CATE School of Engineering

Partner institutions: None

Field: Engineering, Design and Mathematics

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module gives students the opportunity to undertake a substantial self-directed engineering investigation in the nuclear field, applying project-management techniques from proposal through to dissemination of findings.

Features: Not applicable

Educational aims: This module provides an opportunity for students to undertake individual, self-directed work, in an area of their choice related to their award, and to further their other engineering-based knowledge and project management skills.

Outline syllabus: It is expected that students will develop a range of skills as their project activities develop, from specialist technical skills through to transferable skills. These are likely to include, but not limited to the ability to:

Project manage their activities, from project selection, aims and objectives, through to identifying and discussing its outcomes and their dissemination.

Build awareness of health and safety issues relating to their project and any wider implications, ensuring a suitable risk assessment process is successfully undertaken.

Understand and assess the project's ethical, economic, legal, social and environmental issues.

Review appropriate background material and related academic literature. National codes of practice and policy should also be considered, as relevant.

Develop research methodology to relate their background research to the project application.

Utilise this methodology to analyse and evaluate the project and its process.

Enhance their written and verbal communication skills to ensure all involved in the project are able to perform as expected. These skills will also be required in the dissemination of the project outcomes.

Verify the results achieved and derive explanations for any deviations from expectation.

Discuss the activities undertaken and develop conclusions about the work done and

its implications.

Identify recommendations for further activity.

Part 3: Teaching and learning methods

Teaching and learning methods: Learning is predominantly through independent, self-directed study, with the support of a project supervisor and the module leader.

The project may encompass any aspect of engineering applied to the nuclear field and will arise from a student's industrial work in consultation with their manager.

The nature of the project will be dependent on the topic being investigated.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 PROJECT PLANNING MANAGEMENT AND IMPACTS

Demonstrate the management of a self-directed original research project, cogent to their degree, reflecting a substantial piece of work. Reflect on the impacts of the project in relation to security, ethics and sustainability.

MO2 PROJECT EXECUTION

Identify an appropriate methodology to execute a systematic study involving technical work.

MO3 PROJECT EVALUATION

Synthesise information, evaluate it and develop justified conclusions and recommendations.

MO4 PROJECT COMMUNICATION:

Effectively communicate technical understanding and recommendations achieved from the research investigation to a technical audience.

Hours to be allocated: 400

Contact hours:

Independent study/self-guided study = 395 hours

Tutor led = 5 hours

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ufmfgy-40-3.html) via the following link <https://uwe.rl.talis.com/modules/ufmfgy-40-3.html>

Part 4: Assessment

Assessment strategy: The assessment of the project will consist of three elements

Portfolio:

A series of formal meetings with the supervisor to ensure key milestones are met.

(Progress Review = meeting with the supervisor where evidence is presented)

Progress Review 1: Evidence of meeting with supervisor (and technician) to generate initial project concept including aims, objectives, scopes, research questions, ethics. Set targets for the next progress review.

Progress Review 2: Evidence of risk assessment, project management, evaluation of methodology, references, and setting targets for the next progress review.

Progress Review 3: Evidence of work undertaken so far and addressing the targets set in the previous progress review.

Report:

Record the project and the related processes

Contain relevant background supporting evidence

Include a clear methodology, and suitable analysis and evaluation

Provide clear conclusions and recommendations for further work based on the project's outcomes

The aim of this element is to ensure the project is technically competent, properly managed and executed. Students are expected to use the dissertation to explain their project and its processes, and are marked on the submission– not the project itself.

Presentation:

This module is delivered as part of the level 6 degree apprenticeship standard Nuclear Engineer which requires the 40 credit project to contain a 45 minute presentation and oral examination as part of the assessment.

Guidelines will be provided to aid project assessment, and will cover all aspects of the project investigation and management as described.

Marking Criteria: Marking criteria will be published, focusing on two key aspects, the management of the project and the demonstration of technical competence.

The resit assessment profile is the same as the first sit. It is expected that students will continue working on the same project at the resit and can therefore revise any first-sit submission. An equivalent assessment for the portfolio activities will be undertaken as follows:

- Evidence of meeting with supervisor (and technician) to generate initial project concept including aims, objectives, scopes, research questions, ethics.
- Evidence of risk assessment, project management, evaluation of methodology, references, and setting targets for the next progress review.
- Evidence of work undertaken so far and addressing the targets set in the previous progress review.
- Reflection on project delivery.

Assessment tasks:

Portfolio (First Sit)

Description: Progression Portfolio

Weighting: 0 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1

Presentation (First Sit)

Description: Viva style - presentation and individual questioning (typically 45 mins) or where appropriate a demonstration of the engineering work in practice.

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO2, MO3, MO4

Report (First Sit)

Description: Submission of a journal, conference, technical report or design summary containing their research activities. Typically this will be a 10-15 page report.

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO2, MO3, MO4

Portfolio (Resit)

Description: Combined portfolio review meeting

Weighting: 0 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1

Presentation (Resit)

Description: Viva style - presentation and individual questioning (typically 45 mins) or where appropriate a demonstration of the engineering work in practice.

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO2, MO3, MO4

Report (Resit)

Description: Submission of a journal, conference, technical report or design summary containing their research activities. Typically this will be a 10-15 page report.

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Mechanical Engineering with Nuclear [UCS] BEng (Hons) 2023-24

Electrical, Electronic and Control Engineering with Nuclear [UCS] BEng (Hons)
2023-24

Mechanical Engineering with Nuclear [UCS] BEng (Hons) 2022-23

Electrical, Electronic and Control Engineering with Nuclear [UCS] BEng (Hons)
2022-23